Impact of Artificial Intelligence on Dental Education: A Review and Guide for Curriculum Update

Abstract

In this intellectual work, the clinical and educational aspects of dentistry were confronted with practical applications of artificial intelligence (AI). The aim was to provide an up-to-date overview of the upcoming changes and a brief analysis of the influential advancements in the use of AI in dental education since 2020. In addition, this review provides a guide for a dental curriculum update for undergraduate and postgraduate education in the context of advances in AI applications and their impact on dentistry. Unsurprisingly, most dental educators have limited knowledge and skills to assess AI applications, as they were not trained to do so. Also, AI technology has evolved exponentially in recent years. Factual reliability and opportunities with OpenAI Inc.'s ChatGPT are considered critical inflection points in the era of generative AI. Updating curricula at dental institutions is inevitable as advanced deep-learning approaches take over the clinical areas of dentistry and reshape diagnostics, treatment planning, management, and telemedicine screening. With recent advances in AI language models, communication with patients will change, and the foundations of dental education, including essay, thesis, or scientific paper writing, will need to adapt. However, there is a growing concern about its ethical and legal implications, and further consensus is needed for the safe and responsible implementation of AI in dental education.